

Physics

Delprov A3 och B

engelsk version

Årskurs

9

Elevens namn och klass/grupp

Systematic investigation in physics

Your task is to plan an investigation that you later will do and evaluate.

If you lift an object, for instance a stone, placed in a fluid you need to use less force compared to if you lift the object above the water surface. This is because a lift force from the fluid is affecting the stone.

Facts

The unit for lift force is Newton (N).

The unit for weight is Newton (N).

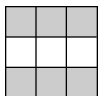
The lift force, with which a fluid affects an object, can be determined by calculating the difference between the object's weight in air and its weight in the fluid.

You are going to investigate which of the fluids water, salt water or ethanol that gives the largest lift force on a 100 g object. You are going to use a dynamometer, a 100 g object, water, salt water that you are preparing yourself and ethanol that you will get from your teacher.

11. Planning phase (time: 30 minutes)

You are going to plan an investigation where you:

- present how you are going to weigh the salt sodium chloride and water you need to mix salt water with salinity level of 25 %.
- are going to find out the weight of a 100 g object in air and in the fluids water, salt water and ethanol.
- present how you are going to calculate the different fluids' lift force on the 100 g object.



Method of investigation

Describe step by step how you will proceed in your investigation. Describe with details so that someone else can follow your plan.

Material

Specify what material you need to realize your investigation.

Leave your plan to your teacher. If needed, you will get a prepared experiment instruction to carry out your investigation.

Comments from the teacher Use your own plan Use the prepared experiment instructionn

Adjustments:

12. Investigation (time: 30 minutes)

You are going to carry out an investigation where you:

- mix salt water with a salinity level of 25 %.
- find out the weight of a 100 g object in air and in the fluids water, salt water and ethanol.
- calculate the different fluids' lift force on the 100 g object.



In your investigation, you are going to:

- work according to your plan or the prepared experiment instruction.
- consider the safety instructions your teacher has informed about.
- take notes on your measurements.



Institutionen för tillämpad utbildningsvetenskap